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United States Patent and Trademark Office
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United States of America

In Re Application of: Thomas Andrew Cohen
US Application Number: 10/587,098
Filing Date: 24 July 2006
Title: Physical User Interface
Group Art Unit: 2173
Examiner:
Attorney Docket No: ACE0018U

26 June 2007

Dear Sirs,

Attached please find the applicant's information disclosure relating to US patent documents, seven foreign patent documents (copies attached), and fourteen non-patent documents (copies attached).

Each of the above documents is considered to be background art. The following comments for the identified documents are organized according to the citation number for each document as listed in forms SB/08a and SB/08b.

Cite No.	Comment
1	This document teaches a bi-directional communication, between a sensor under a "workspace", and a multi-sided "token". (col.5 ll38-67 & col.6 ll1-2) The sensor is not capable of producing unique recognition signals for each token. Moreover, there is no teaching of a control system which directly or indirectly accepts sensor inputs and generates commands to an operation system.
2	The document teaches the recognition of RFID tags and limited use of RFID tags on board games to signify a token location. (Para. [0011], [0277], [0278], [0279]). It does not teach a sensor array used in conjunction with workspace divisible into command or action

Suite 5, Level 6, 139 Macquarie St. Sydney NSW 2000 Tel: 61 2 8252 7800 Fax: 61 2 8252 7810 Email: mike@molins.net.au

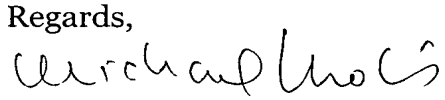
	related regions. Moreover, there is no teaching of a control system which directly or indirectly accepts sensor inputs and generates commands to an operation system.
3	This document teaches a device which reads RF information from a "token" and includes operational units. The RF information is processed by a controller, and indirectly causes the operational unit to function in a corresponding fashion. (page 7, ll9-16) There is no teaching of a workspace divisible into command or action related regions. There is further no teaching of sensors capable of producing signals, nor of signal processors capable of determining token locations from said signals.
4	This document teaches bi-directional RFID communication and play information storage, in interactive game play (Para. [0043], [0079]). This document does not teach a control system which directly or indirectly accepts RF sensor inputs and generates commands to an operation system.
5	This patent teaches bi-directional RFID communication and play information storage in interactive game play. It does not teach a control system which directly or indirectly accepts RF sensor inputs and generates commands to an operation system.
6	This document teaches a communication between an RFID tag and a microprocessor of an induction cook range. There is no teaching of a workspace that is divided into discernible regions signifying various commands to or actions of the operating system.
7	The patent teaches using uniform magnetic fields created between coil pairs to locate RFID tags. (col.3 ll. 48-67 and col.4 ll.1-16). This patent does not teach tokens which can be placed onto a workspace, so that sensors below the workspace may produce signals that eventually lead to commands to or actions by an operating system.
8	The document teaches a method of game play wherein bi-directional RFID communication is used, so that a player's (i.e. "user") game progress can be tracked and modified. (Para. [0032], [0050]) However it does not teach a physical interface between a user and a microprocessor that runs an operating system.
9	This document teaches a multiplayer-play environment outfitted with RFID tags, which permit the modification and storage of a player's (i.e. "user") play status to be modified throughout the game. (Para. 0058). However it does not teach a physical interface between a user and a microprocessor that runs an operating system.
10	This document teaches the identification and location of "tokens" by a sensing array underneath a surface. (Para. 0016) However, the taught surface is not divisible into action or command related regions, wherein the action or command is in relation to an operating system.
11	This patent teaches an interface, comprising an array of sensors beneath a workspace that can detect and identify various "tokens". (Col. 9 ll. 6-15) It also teaches that "tokens" detected at a different "region" may trigger a different audiovisual program and dictates the fashion the program is run. (Col.10, ll29-34) This patent does not teach that the microprocessor uses the received data to run an operating system. The "workspace" taught here is divisible in to

	"regions", but there is no teaching that each "region" is associated with an action or a command related to an operating system.
12	This patent teaches uniquely identifiable tokens whose identity and location are transmitted to a computer and the computer responds according to the transmitted data. There is no specific teaching of a signal processor between the "sensors" and the "controller".
13	This patent teaches an array of coils (sensors) underneath a play space which identifies and locates play pieces (tokens). There is no teaching of signal processors capable of deciphering token identity and locations, nor is there teaching of commands to or actions of an operating system,
14	This document teaches an array of sensors under a game table (i.e. workspace) that can identify tokens. The workspace is not divisible into regions sending commands to or controlling the actions of an operating system.
15	This document relates to the retrieval of user profiles by identifying unique RFID tokens. This document does not teach a sensor array under a discernible workspace, where the workspace is divisible into regions and each region is associated with commands to an operating system.
16	This document teaches the utilization of two-way RFID communication in interrogating unique item (i.e. token) information. It also teaches a workspace with an underlying touch-sensor; however this touch sensor does not identify any unique token. Although in the teaching the RFID receivers identify unique tokens, they are not arranged beneath a discernible space divisible into regions that are associated with commands to an operating system.
17	This patent teaches RFID tokens that are placed onto a workspace divided into discernible regions. However each individual region is not associated with commands to or actions of an operating system.
18	This patent teaches a bi-directional communication and data modification between RFID transponders. There is no teaching of workspace areas divided into command or action specific regions.
19	This patent teaches a bi-directional communication between a token and an RFID identifier (i.e. "sensor"). There is no teaching of sensors underneath a working surface that is divided into regions, where each region is associated with a command to or an action of an operating system.
20	This patent teaches the communication between a token and sensor points arranged across a sensor sheet. There is no further teaching of a workspace that is divided into regions, where each region is associated with a command to or an action of an operating system.
21	This patent teaches communication between a group of RFID tokens. There is no teaching of a workspace, a sensor array under the workspace, or an operating system.
22	This paper teaches RF tags that are retained under an interactive surface. The RF tags measure properties of tokens close to this surface. There is no teaching of dividing the surface into regions,

	wherein each region is associated with a command to or an action of an operating system.
23	This paper teaches an interactive surface above a sensor array. There was a brief mention of placing tokens at different points of the interactive surface to retrieve information in various manners, but this feature was specifically said to have been abandoned, without discussion for implementation. The system described by this paper does not involve a surface divided into regions, where each region is associated with a command to or an action of an operating system.
24	This paper teaches a tangible user interface (TUI), on which physical tokens are placed. There is no specific teaching of sensors underneath the interface surfaces. There is further no clear teaching that the TUI is divided into regions and used to run an operating system.
25	This paper teaches a user-interface system that allows multiple users to share services that are supported by a backend central computing device. There is no teaching that the user interface is divided into regions and used to run an operating system.
26	This paper teaches a gesture input technique for a touch system, where a token (e.g. finger) is placed on a working surface (touch tablet). There is no teaching of a user interface that is divided into regions and is used to run an operating system.
27	This paper teaches a communication between RFID tokens. It does not teach a user interface for a microprocessor device that runs an operating system.
28	This paper teaches communication between RFID tokens. It does not teach a user interface for a microprocessor device that runs an operating system.
29	This paper teaches sensors that are located under electronic textile surfaces, in wearable computers. It does not teach a user interface for a microprocessor device that runs an operating system.
31	This paper teaches a framework where communication between RFID tokens enables the objects (devices) carrying the tokens to become one functional device. It does not teach a user interface for a microprocessor device that runs an operating system.
32	This paper teaches sensors under a variable display. It does not teach a user interface for a microprocessor device that runs an operating system.
33	This paper teaches an array of sensors underneath a work surface (or user interface) which is divided into regions, and that some tokens issue commands to a computer. (ref: "Design" section) It does not teach that the interface region is associated to a command to or an action of an operating system.
34	This paper teaches a system, wherein tokens are placed onto a work surface, the work surface being a variable display and which covers an array of sensors. However this paper does not teach that the work space is divided into discernible regions that are associated to commands to or actions of an operating system.
35	This website, along its related "Features" link, describes tokens that are placed onto a workspace that is divided into different regions. There is no teaching of a user-interface with a microprocessor which

	runs an operating system, neither is there any description of each region signifying commands to or actions of the operating system.

Regards,



Michael Molins
Reg. No. 31785
Customer No. 33372

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	10/587,098
Filing Date	24 July 2006
First Named Inventor	Thomas Andrew Cohen
Art Unit	
Examiner Name	
Attorney Docket Number	ACE0018U

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 5823782	10-20-1998	Marcus et. al.	Col 5, lines 38-52
	2	US- 2004/0214642	10-28-2004	Stephen C Beck	Para 0278 - 0279
	4	US- 2002/0092311	05-13-2004	Weston et. al.	Para 0043, 0079
	5	US- 6761637 B2	07-13-2004	Weston et. al.	all
	7	US- 6404340 B1	06-11-2002	Massachusetts Inst of Technology	Col 3, L48-67; Col 4, L1-16
	8	US- 2004/0033833	02-19-2004	Briggs et. al.	Para 0032, 0050
	9	US- 2004/0077423	04-22-2004	Weston et. al.	Para 0058
	10	US- 2001/0035815	11-01-2001	Fletcher et. al.	Para 0016
	11	US- 6167353 A	12-26-2000	Piernot et. al.	Col 9, L6-15; Col10, L29-34
	12	US- 6356255 B1	03-12-2002	Weil	all
	13	US- 5188368 A	02-23-1993	Ryan	all
	14	US- 2002/0147042 A1	10-10-2002	Vuong et. al.	all
	20	US- 5372511	12-13-1994	Cheung	all
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	3	WO 2002/082363	10-17-2002	Alsafadi	Pg 7, Lines 9-16	
	6	WO 2004/071131	08-19-2004	Clothier	all	
	15	WO 200199410	12-27-2001	Koninklijke Philips	all	
				Electronics ICS N.V.	all	
	16	WO 200152179	07-19-2001	3M Innovative Prop. Comp.		
	17	JP-2002215012	07-31-2002	Fuji Xeriox Co Ltd	all	

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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	18	JP-2003047771	02-18-2003	Nitta Harunori	all	
	19	GB - 2381211 A	04-30-2003	Wilson	all	
	21	JP-2002320763	11-05-2002	Toppan Forms Co Ltd	all	

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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	22	PARADISO ET AL, "Sensor systems for interactive surfaces". IBM Systems Journal, Vol 39, No.3/4, 2000 P.892	
	23	OMOJOLA ET AL, "An installation of interactive furniture". IBM Systems Journal. Vol 39 No. 3/4, 2000 P.861	
	24	ULLMER & ISHII, "Emerging Frameworks for tangible user interfaces". IBM Systems Journal Vol 39, No 3/4, 2000 P.915	
	25	ANONYMOUS, "Pervasive user interface with Smart devices, centralised computing and communication". (IBM) RD 449163. Sep 2001	
	26	ANONYMOUS, "Interactive host capture of gesture input of a touch system". (IBM) RD312038. Apr 1990. 1/1	
	27	ANONYMOUS, "Printing improvements utilizing proximity detection", (IBM) RD 467054, March 2003, 1/2	
	28	ANONYMOUS, "Printer or multi-function device reconfiguration system utilizing RFID tag detection" (IBM) RD 490082, Feb 2005 1/2	
	29	POST ET AL, "E-broidery; Design and fabrication of textile-based computing", IBM Systems Journal V39, No. 3/4, 2000 P840	
	30	SCHMIDT ET AL, "Enabling implicit human computer interaction a wearable RFID tag reader". ISWC 2000, P.193	
	31	FU ET AL, "A framework for device capability on demand and virtual device user experience" IBM J. RES DEV. Vol 48 No. 516, 2004	

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	32	ANONYMOUS, "Pictorial Programmable function keys for keypad". Research Disclosure 265071, UK, May 1986	
	33	R.J.K. JACOB ET AL "A tangible interface for organizing informationusing a grid". Proc. ACM CHI Conference on Human Factors in Computing Systems, pp. 339-46, 2002	
	34	B. ULLMER ET AL, "The metaDESK: Models and prototypes for tangible user interfaces". Prox. ACM Symposium on User Interface Software and Technology, pp. 223-32, 1997	
	35	GDT Projects website, DGT Electronic Chessboard page, as archived December 2003 http://web.archive.org/web/20031207090754/www.dgtprojects.com/eboard.htm	
		(cont...) http://web.archive.org/web/20031206104544/www.dgtprojects.com/eboard_features.htm	

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